

Mill D South

The Mill D South Fork snow course is located near Salt Lake City, up Mill Creek Canyon at an elevation of 7400 feet msl. This particular course is in a small meadow surrounded by primarily conifer forest with some aspen. Potential weather modification: 77, 88-96.



Mill D South in 1936 looking to the northwest.



Mill D Southeast looking across the meadow. There are aspens on the edge of the meadow and then conifers. Note the sparse conifer coverage on the hillslope.



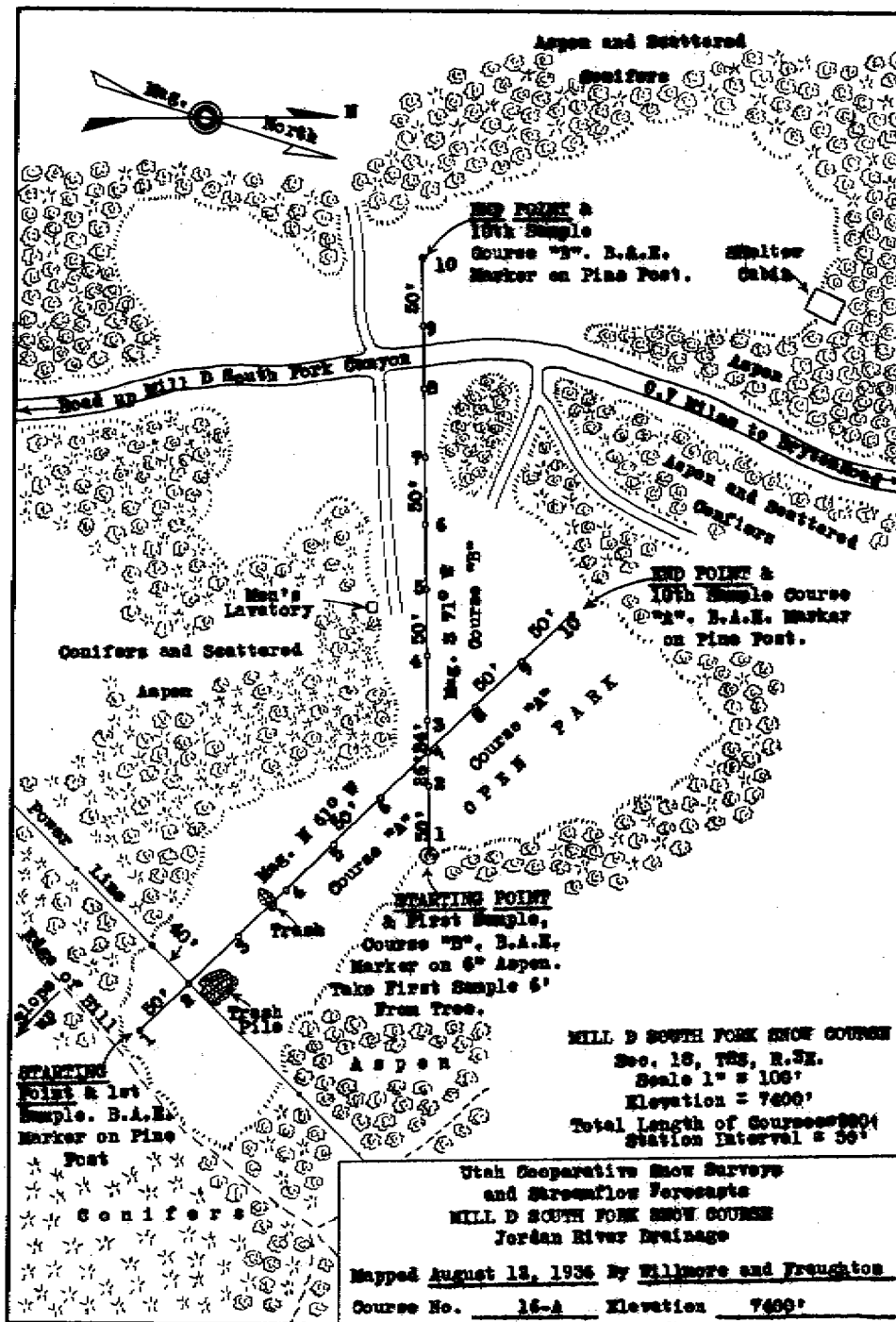
A current photo looking in the same general direction as the previous photo. Note the extensive re-forestation on the hill-slope in the background. The meadow has narrowed substantially compared to the 1936 photos and the aspens and small deciduous trees/brush on the right have been replaced with fairly tall conifers. A significant change however, is the encroachment of cabins to the west that are now very close to the snow course. We have no documentation on how this development may impact snow accumulation. There are several tall conifers on the right side (west) of the snow course and there are both conifers and aspens on the north east side.



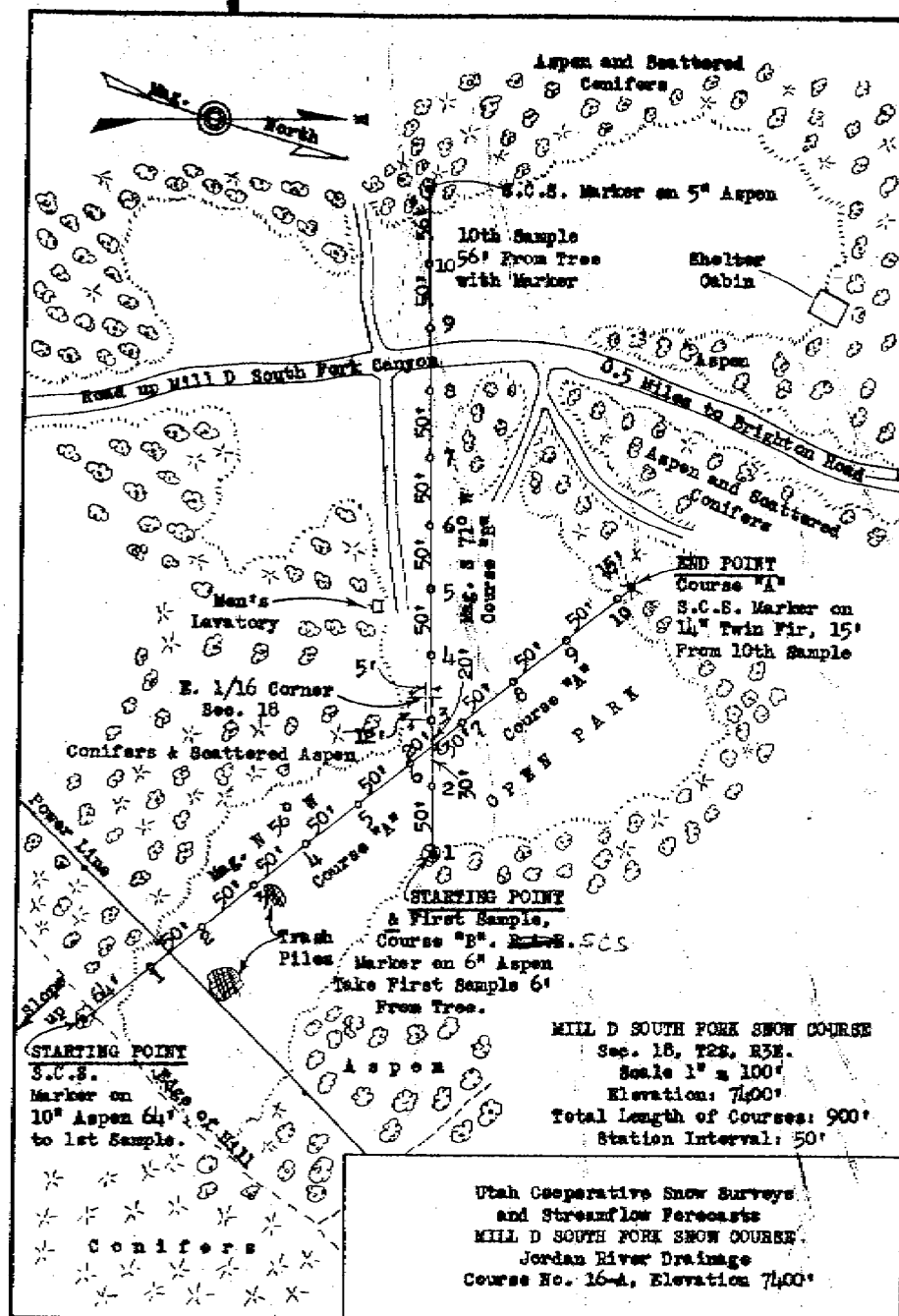
In this current 2007 photo you can see that this cabin built in 1997 is right on the northwest end of the snow course. The cabin to the right was built in 1946/47 time frame and replaced a smaller cabin that was present when the course was originally laid out. This course was initially laid out in an X pattern and the 2 signs in this picture represent the west ends of the X. The photo is looking in the same general orientation as Photo 1 from 1936 and as one can see, there are now more trees, taller trees, and a new cabin.



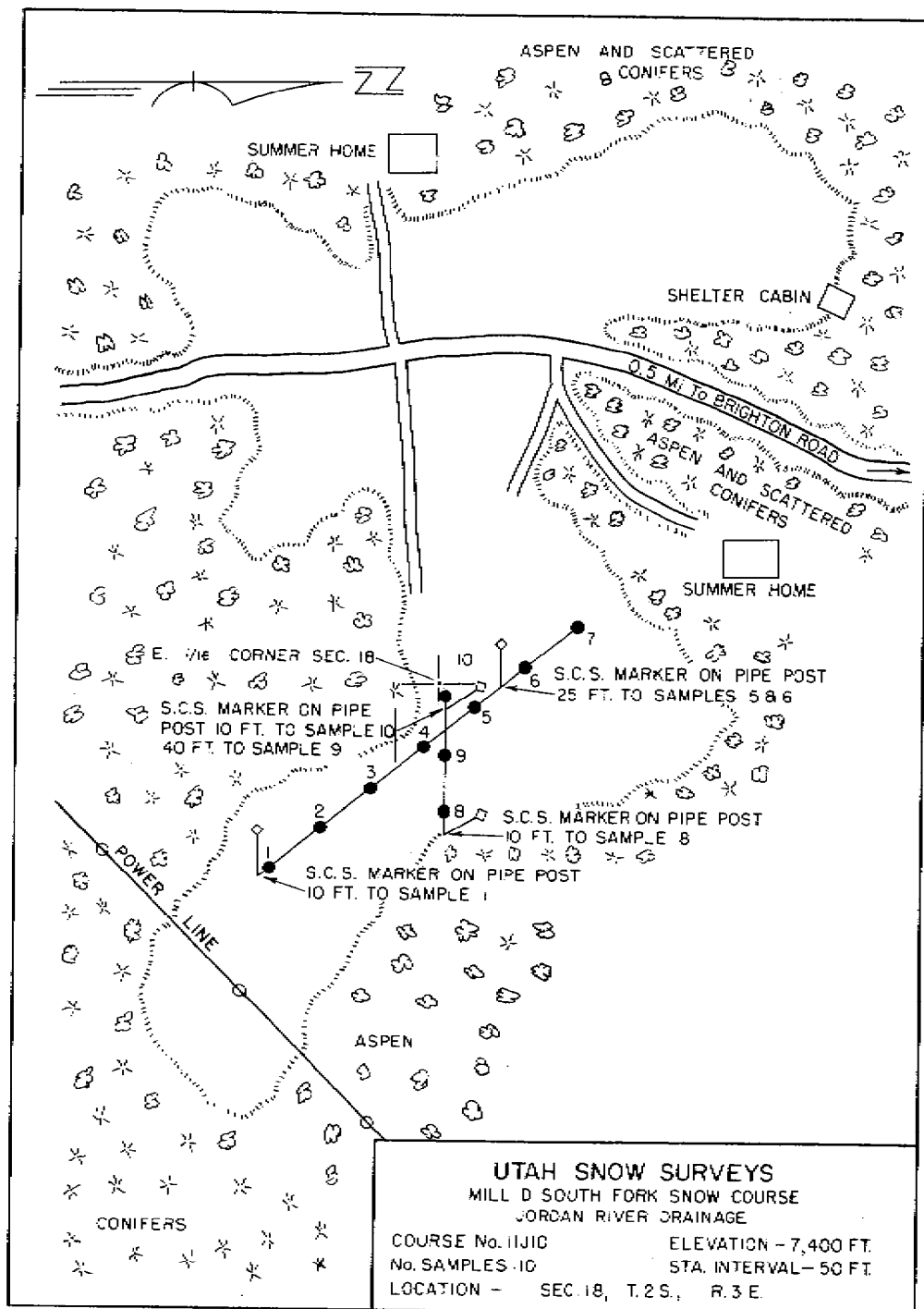
This photo shows the older cabin in relation to the end marker and also the encroachment of the aspen trees. Clearly this is not a case where interception is reducing the amount of snow accumulation nor is long wave radiation from conifers impacting ablation as is the case at other locations. There may be an impact from altered wind deposition.



Original Mill D South snow course map. This site had a cross pattern or 2 legs to measure.



Next version of map.



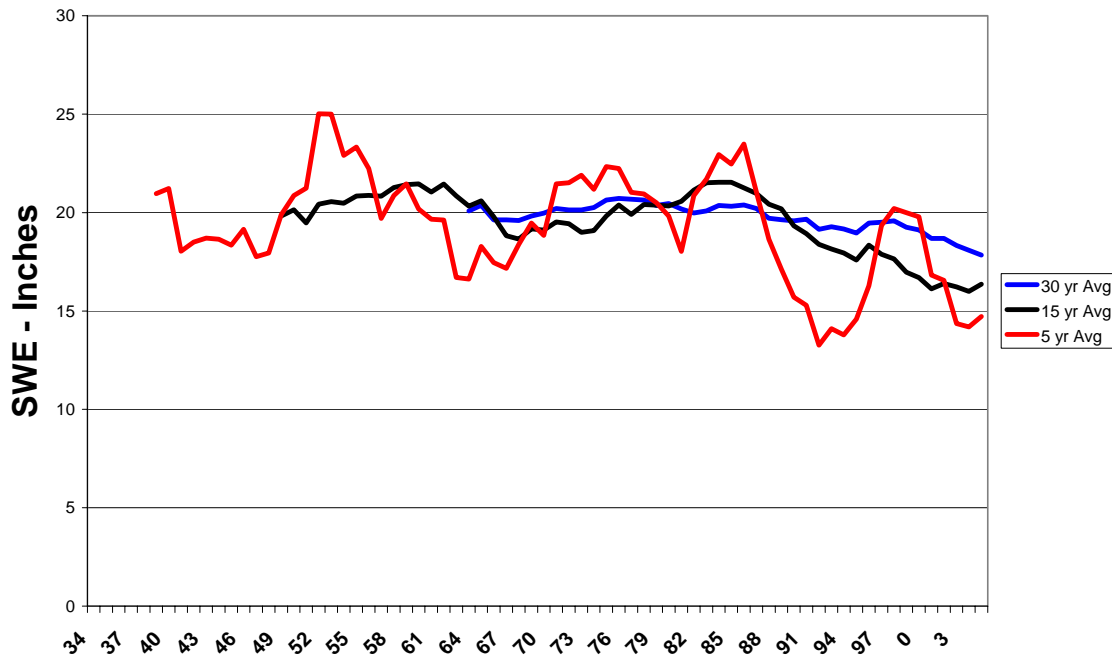
U.S. DEPARTMENT OF AGRICULTURE, BUREAU OF CONSTRUCTION, WASH. D.C.

7-L-16156-B

Current configuration of shortened course.

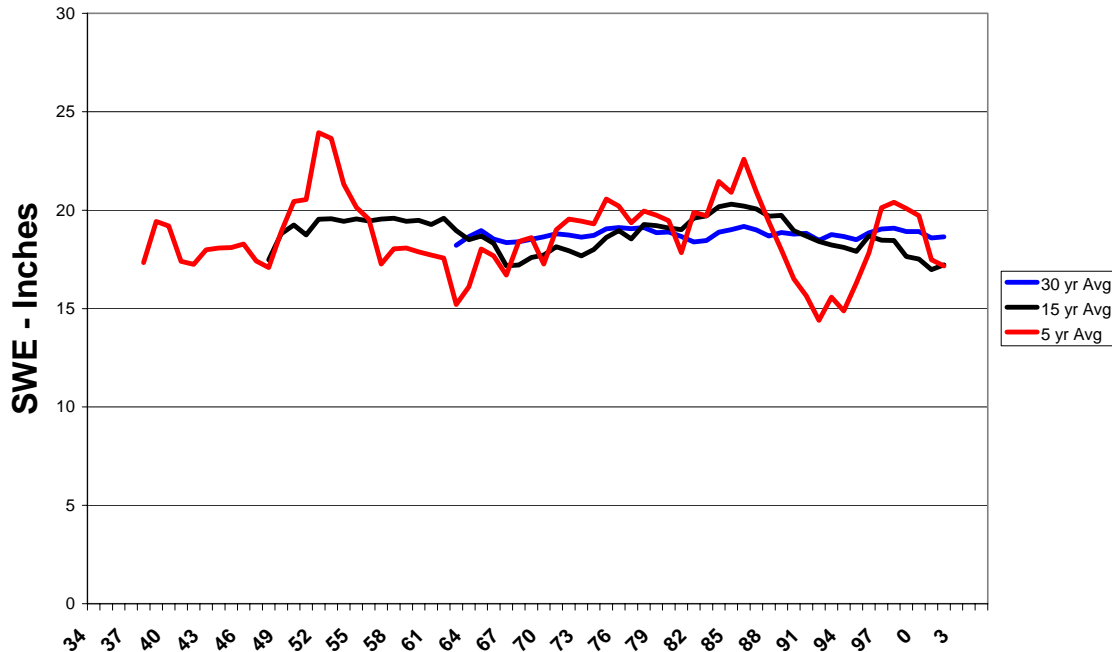
When a snow course was shortened, the original points continued to be measured although renumbered, thus points 1,2,3,4 and 5 may have originally been points 13,14,15,16 and 17. This map also shows the relative position of vegetation and other features with respect to the course. Distances are not measured and asterisks do not represent individual trees rather a general depiction of vegetation. The density of vegetation is also relative and not absolute.

Mill D South



This chart shows a steady decline in April 1 SWE from about 20 inches to about the 17-18 inches. The decline mimics courses that have had steady vegetative changes. Much of the decline comes in the early 1990's, a very dry period and continues currently. Given the cabin was built in 1997, when snowpacks in the area rebounded for a time prior to the 2000 drought, it is conceivable that the cabin has had some impact on snow accumulation. There is some ongoing research that indicates pollutants may decrease orographic precipitation downwind of sources by as much as 25%. This site would likely have the potential for pollutant impacts as it is directly downwind from Salt Lake City. However, the question remains - would not all sites downwind be equally impacted - some/most do not appear to be.

Parleys Summit



Here is a case in point, Parleys Summit Snow Course is located only 3 air miles from the Mill D South course and sits at an elevation of 7740 feet msl . This particular course shows no discernible trend in April 1 SWE accumulation in the 30 year running average while only a short distance away from and at a comparable elevation has a very distinct downward trend. Theoretically, pollution impacts would affect both sites equally. Prior to long term data utilization/comparison - the question of why one declines and one remains constant should be answered.

The cause of this decline at Mill D South remains unspecified. This site has had some change in vegetation but it is unclear if this is the cause of snow decline. The decline could also be related to development but that is merely speculation as there is no research that quantifies impacts of development on snow accumulation. Use of this station in long term comparisons is undetermined until the impacts of surrounding area development and possibly other impacts can be identified / quantified.

R Julander

2007